

City of Milwaukee Storm Water Best Management Practices (BMPs)



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Two Types of Storm Water BMPs Utilized by the City of Milwaukee

1. Source Area Controls:

- BMPs that prevent storm water from contacting materials that contaminate it or, if contact occurs, reduce pollutants at or near the source of contamination.
- Can be structural or non-structural in nature.

2. Treatment BMPs:

- Treatment systems, works, or practices that are designed to reduce or remove pollutants from contaminated storm water.
- Structural in nature.

Source: Wisconsin Administrative Code Section NR216.002

City of Milwaukee Source Area Controls



- Street Sweeping
- Catch Basin & Inlet Cleaning
- Leaf & Yard Waste Collection
- Oil & Antifreeze Collection
- Illicit Discharge Detection & Elimination
- Public Information & Education
- Structural BMPs at Public Works Facilities

Street Sweeping



- Sweeping program runs early Spring to late November
- Heavy sweep starts yearly cycle
- Streets swept on 1 to 4 week cycles based on need
- Final sweep at end of fall leaf collection program
- City fleet includes 22 mechanical broom sweepers
- 5,500 tons of material collected and landfilled in 2004

Street Catch Basin & Inlet Cleaning



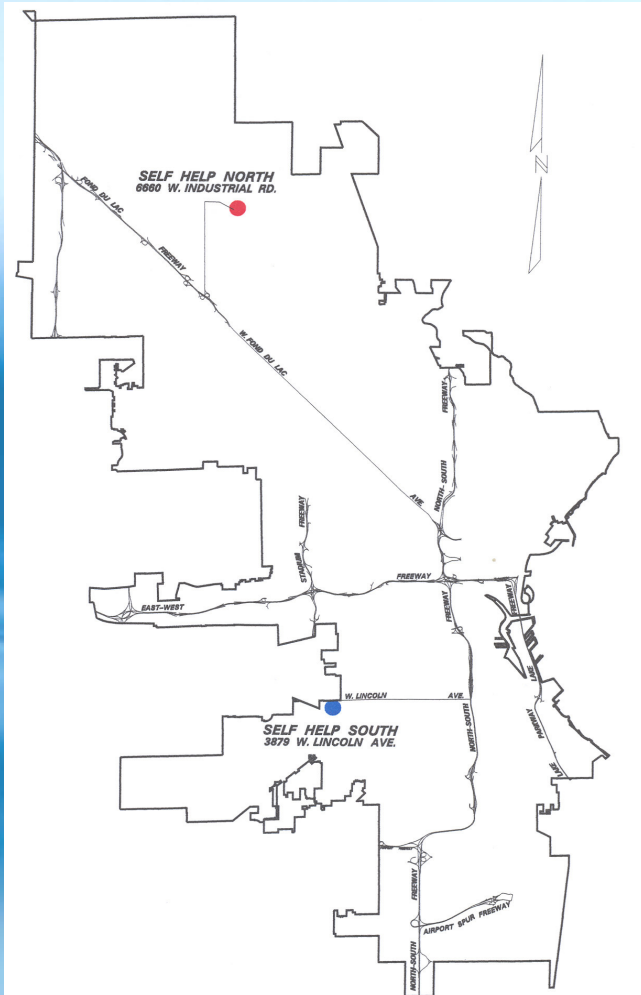
- 25,000 catch basins & 32,000 storm inlets in City
- Catch basin cleaning cycle – 3 yrs (7,900 cleaned in 2004)
- Storm inlets inspected yearly (10,600 cleaned in 2004)
- 2,700 tons of material removed in 2004
- Removed material is dewatered & landfilled under contract

Leaf & Yard Waste Collection – Curbside



- Leaf collection performed between mid-October & mid-November
- 6 passes through each City neighborhood
- 16,000 tons of leaves collected and composed in 2004
- Brush collected at curbside year round
- 5,400 tons of brush collected in 2004

Leaf & Yard Waste Collection– Self-Help Centers



- City maintains two self-help centers where citizens can bring yard waste and refuse year round
- Self-Help North is located at 6660 N. Industrial Rd. (red dot)
- Self-Help South is located at 3879 W. Lincoln Ave. (blue dot)
- 4,100 tons of brush and 1,600 tons of grass brought in by residents in 2004

Oil & Antifreeze Collection



- City maintains used oil & antifreeze collection sites at the two self-help centers
- Provides accessible alternative to storm drain dumping for public
- 74,600 gallons of oil and 4,200 gallons of antifreeze collected during 2004

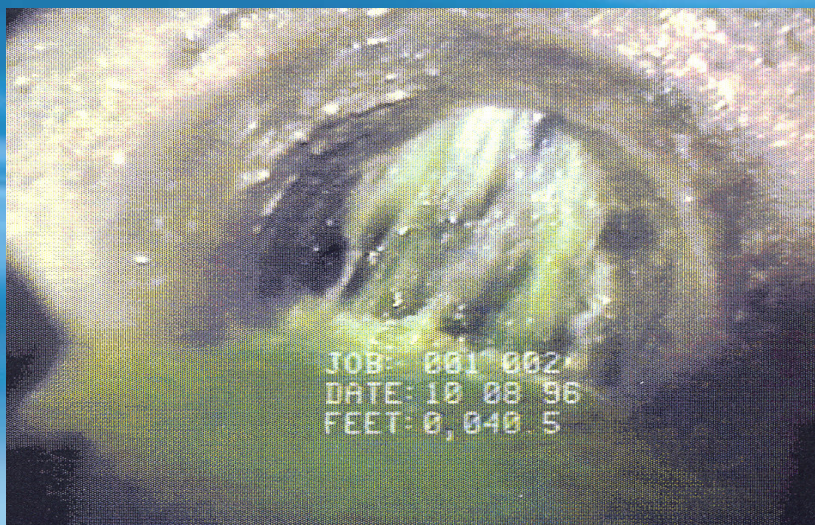
Illicit Discharge Detection



- All storm sewer outfalls (762 total) checked on specific schedules
- Active outfalls sampled and screened for contaminants using colorimetric test kits
- Screening includes: 5 chemical parameters, pH, temperature, and visual observations
- Screening proceeds upstream until suspected illicit discharge is isolated between 2 manholes.

Illicit Discharge Elimination

- Suspected illicit discharges confirmed through smoke testing and dye testing.
- Corrective orders written to rectify illicit discharges.



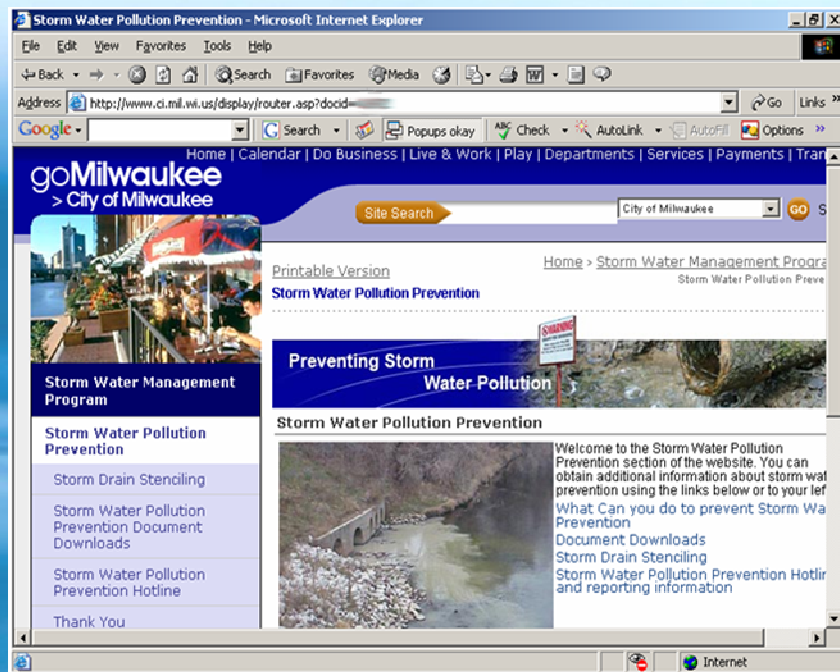
INSPECTION REPORT AND ORDER TO CORRECT CONDITION	
CITY OF MILWAUKEE DEPARTMENT OF NEIGHBORHOOD SERVICES Plumbing Section 841 N. Broadway Milwaukee, WI 53202	
DEPARTMENT COPY	Serial #: 003820101 Inspection Date: September 13, 2002 Section ID#: COMP #223/02 Letter Date: September 23, 2002 by: Foster Finco Phone: (414)-286-8220 District #: 831 CT: 213 sing-com
Recipients: [REDACTED]	
Re: 2525 W PLAINFIELD AV Taxkey #: 577-0631-000	
A recent inspection of the premises at the above address revealed conditions that violate the Milwaukee Code of Ordinances. You are hereby ordered to correct each violation listed below within 90 days of service of this order.	
Wisconsin Statutes Section 145.06 ALL PLUMBING WORK MUST BE CORRECTED BY A LICENSED MASTER PLUMBER. Section 225-3 Milwaukee Code of Ordinances A PLUMBING PERMIT IS REQUIRED FOR ALL PLUMBING WORK.	
Violations	
General	
1.	225-3-1&4 Obtain a proper plumbing permit for all violations except for those in which "permit is not required" is so indicated.
Outside	
2.	225-01, Comm 82.21(2)(a)(f) Repair or replace the defective sanitary building sewer. (Positive dye test)
3.	225-01, Comm 82.21(2)(a)(f) Repair or replace the defective storm building sewer. (Positive dye test)
01-17-03 OK'D B. Vincent	
OFFICIAL NOTICE OF VIOLATION The City of Milwaukee - Department of Neighborhood Services	

Public Information & Education (I & E) - Overview



- Goals are to inform public about storm water pollution issues and provide practical solutions.
- Milwaukee Cleaner River Project was started in 1993 and included focus group research and development of a campaign plan and related promotion materials that form the foundation.

Public Information & Education – Major Components



- The Milwaukee Cleaner River Conference
- Milwaukee Cleaner River Project informational materials
- Pollution Prevention Hotline (414-286-8162)
- Storm drain stenciling
- Community outreach events
- New storm water website – “coming soon” (www.ci.mil.wi.us)

Structural BMPs at Public Works Facilities



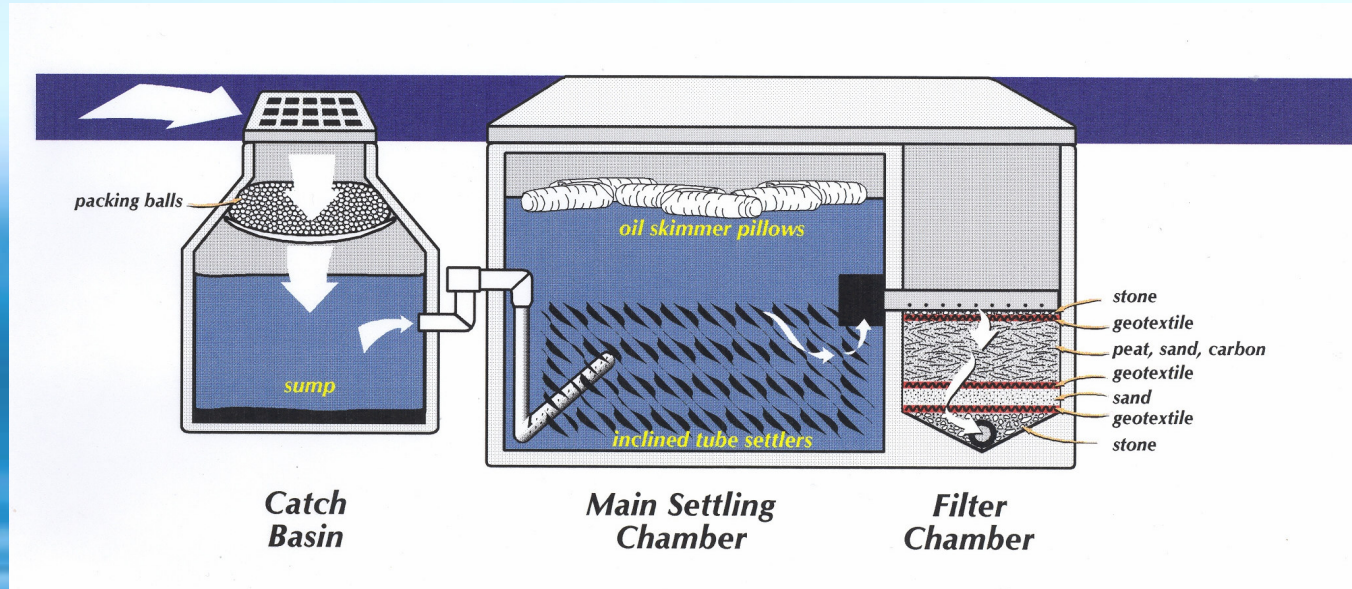
- Storm Water Pollution Prevention Plans (SWPPPs) developed for 24 public works facilities in 2000
- SWPPPs recommended various source control structural BMPs
- City proceeding with implementing recommendations

City of Milwaukee Treatment BMPs



- Multi-Chambered Treatment Tank (MCTT)
- Wet Detention Basins
- Dry Detention Basins
- Bioretention Facilities

Multi-Chambered Treatment Tank (MCTT) – Ruby Yard



- Constructed in 1995 (Dimensions: 21' by 12' by 7')
- 3 chambers: catch basin, settling chamber, & filter chamber
- Drainage area = 0.16 acres of public works yard
- Goal: 80% TSS removal by design (98% from USGS testing)

Wet Detention Basin – 91st & Dean



- Constructed in 2003
- Located on 9-acre City-owned property
- Drainage area: 165-acre industrial park
- Goals: peak outflow attenuation and 80% TSS removal

Wet Detention Basins – 68th & Dean



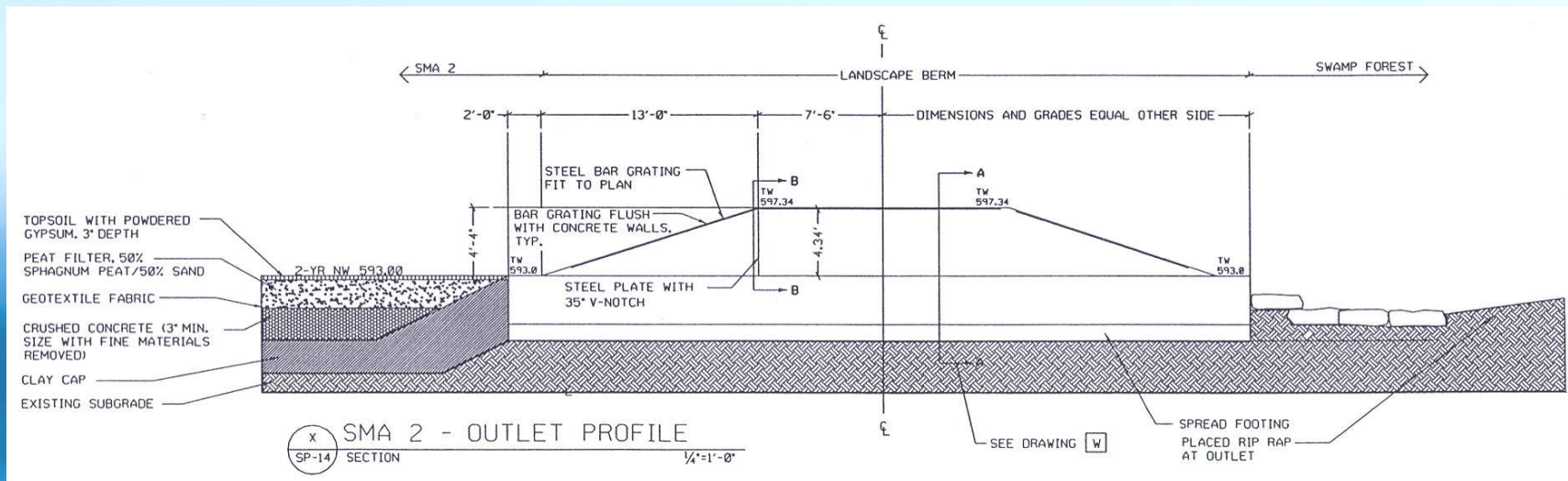
- Constructed in 1990-91
- 2 connected ponds located on 12.5-acre City-owned property
- Drainage area: 160 acres of mainly industrial park
- Goals: peak outflow attenuation and maintain water quality

Dry Detention Basin – 60th & Mill



- Constructed in 2003
- Located on 1.5 acre City-owned property
- Drainage area: 18 acres of industrial park
- Coupled with grass swale and Stormceptor[®] to address quality
- Goals: peak outflow attenuation & 80% TSS removal

Bioretention Facilities – Canal St.



- Being constructed during 2005 to future (3 project locations)
- Locations are: 11th & Canal, 27th & Canal, and 35th & Canal
- Facility Sizes: 2 acres, 12 acres, & 10 acres (respectively)
- Drainage Areas: 10 acres, 74 acres, & 82 acres (respectively)
- Goals: peak outflow attenuation & 80% TSS removal

Bioretention Facilities – Canal St.



The Present



The Future

Questions?

